REMARKS

The claims have been amended to more clearly define the invention as disclosed in the written description. In particular, the claims have been amended for clarity.

The Examiner has rejected claims 1, 4-6, 9, 17 and 18 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,493,312 to Negishi et al. in view of U.S. Patent 6,706,358 to McDaniel et al. The Examiner has further rejected claims 2, 3, 10-16 and 19 under 35 U.S.C. 103(a) as being unpatentable over Negishi et al. in view of McDaniel et al., and further in view of U.S. Patent Application Publication No. 2003/0035361 to Knight et al. In addition, the Examiner has rejected claim 7 under 35 U.S.C. 103(a) as being unpatentable over Negishi et al. in view of McDaniel et al., and further in view of U.S. Patent Application Publication No. 2002/0098446 to Alperovich et al. Furthermore, the Examiner has rejected claim 8 under 35 U.S.C. 103(a) as being unpatentable over Negishi et al. in view of McDaniel et al., and further in view of U.S. Patent 6,144,631 to Kawano.

The Negishi et al. patent discloses an optical information medium, in which a transparent substrate (1) is formed with a tracking guide groove (3) and is then coated with a recording layer 12. The recording layer 12 is then overlaid with a reflective layer (13) which is then overlaid with a protective layer (14). Recording data is effected by irradiating the medium with, e.g., a laser beam forming pits in the recording layer on the lands interspersed between the tracking guide groove (3). Reading the data is effected

by focusing a lower power laser and reading the data by detecting the reflected light having a varying intensity based on the difference in reflectivity of the pits and the land areas between the pits.

The McDaniel et al. patent discloses a storage disk comprising depressions and/or raised features, in which a laser in combination with a magnetic field is used to read data stored on the disk.

The subject invention as claimed in claim 1, includes the limitation "an information layer comprising a plurality of data areas, each data area being arranged to emit light when illuminated by light at a predetermined wavelength". The Examiner has indicated that Negishi et al. teaches this limitation and points out Fig. 6 and col. 10, lines 9-34 therein.

Applicant submitsthat the Examiner is mistaken. In particular, the noted section of Negishi et al. merely teaches how the disk is formed with the various layers, and that the sector information is readout using an optical pickup which emits a laser beam at a particular wavelength. Further, 8 16 modulation signals are recorded. However, there is no disclosure of any area of the storage disk being capable of emitting light. Rather, the storage disk of Negishi et al. reflects the light of the incident light beam at differing intensities.

Claim 1 further includes the limitation "a readout layer comprising a plurality of optical apertures, each optical aperture being arranged to image substantially only the near field of light

emitted from a respective data area". The Examiner concedes that Negishi et al. does not disclose this limitation, but indicates that McDaniel et al. does teach this limitation and notes readout layer (204) and Fig. 3, col. 12, lines 5-33.

Again, Applicant submits that the Examiner is mistaken. In particular, the noted section of McDaniel et al. states:

> "In one embodiment, the readout layer 204, is magnetized such that flux emanating from the data domain marks 281 in the underlying storage layer 202 cannot be read when not heated, for example, as described by K. Aratani, et al, Proc SPIE 1499, 209 (1991), which is incorporated herein by reference. In this embodiment, to read the data domain marks 281, the readout layer 204 is heated by the outgoing laser beam 191 to a lower temperature than the storage layer 202 is heated for writing. In doing so, a temperature profile 279 is formed in the readout layer 204 by the outgoing laser beam 191 as the disk 107 rotates. In this embodiment, a particular temperature along the temperature profile 279 creates an aperture 580 in the readout layer 204, wherethrough flux emanating from the data domain marks 281 beneath the aperture is coupled to vertically align a region of magnetic domains in readout layer 204 above such that the magnetic domain marks in the readout layer 204 can subsequently be detected by head 106 elements S1, MR, S2. The thermal time constant of the readout layer 204 should preferably be long so that the heat generated by the optical spot 348 will not dissipate by the time the head elements MR, S1, S2 pass over the spot. In this embodiment, the flux from the data domain marks 281 is understood to be accessible only during the time at which the outgoing laser beam 191 is applied to form the aperture. Preferably, the aperture will be preferably smaller the spot 348 diameter and the outgoing laser beam 191 will, thus, not limit the resolution in the track direction, but will define the readout resolution in a cross data track 103 direction (radially)."

It should be apparent from the above that McDaniel et al. effects reading of the disk by heating the readout layer using a focused laser beam thereby temporarily forming an aperture.

Magnetic flux is then able to emanate from the data domain marks through the aperture which is then detected by head 106 elements S1, MR, S2. However, as disclosed at col. 10, lines 35-46, elements S1 and S2 are shields while MR is a magneto resistive element for detecting magnetic flux.

Applicant therefore submits that McDaniel et al. neither discloses nor suggests a readout layer comprising a plurality of optical apertures. Rather, McDaniel et al. discloses a readout layer in which during reading, an aperture is formed by heating by a laser beam. Further, Applicant submits that McDaniel et al. neither discloses nor suggests "each optical aperture being arranged to image substantially only the near field of light emitted from a respective data area". Rather, the aperture formed in the readout layer of McDaniel et al. is arranged to permit the passage of magnetic flux.

Claim 2 includes the limitation "both the readout layer and the information layer are planar and substantially parallel, the separation between the information layer and the readout layer being less than the wavelength of emitted light".

The Knight et al. publication discloses a near-field optical storage system with flying head. The Examiner indicates that while Negishi et al. does not disclose the claim 2 limitation, this is found in Knight et al. in Fig. 28D and paragraph 250.

Applicant submits that the Examiner is mistaken. In particular, Figs. 28D-1 and 28D-2 give no indication of the separation between the readout layer and the information layer.

Further, as should be apparent from paragraph [250], the Knight et al. disk is similar to that in McDaniel et al., i.e., an aperture is formed in the readout layer through heating by the laser beam. However, light is not emitted through the aperture; rather magnetic flux from the information layer passes through the aperture. Hence, Knight et al. does not disclose or suggest the separation being less than the wavelength of emitted light, since there is no emitted light in Knight et al.

In addition, Applicant submits that Knight et al. does not supply that which is missing from Negishi et al. and McDaniel et al. as noted above.

Claim 7 includes the limitation "wherein each area comprises a fluorescent material, the light emitted from each data area comprising the light emitted by the material as it fluoresces, the illuminating light acting to excite the fluorescent material".

The Alperovich et al. publication discloses a multilayer recordable optical medium with fluorescent reading. However, Applicant submits that Alperovich et al. does not supply that which is missing from Negishi et al. and McDaniel et al. as noted above.

The Kawano patent discloses an information recording medium, and readout method and readout apparatus therefor, in which a light transmitting layer is formed over a metal layer which is in turn formed on the substrate provided with recessed pits or grooves. However, Applicant submits that Kawano does not supply that which is missing from Negishi et al. and McDaniel et al. as noted above.

In view of the above, Applicant believes that the subject invention, as claimed, is not rendered obvious by the prior art, either individually or collectively, and as such, is patentable thereover.

Applicant believes that this application, containing claims 1-19, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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